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Empirical Analysis of the Relationship Between Debt Level and Business Performance of List Companies in the A-share Real Estate Industry

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Abstract: Since China's reform and opening, the real estate industry has moved towards marketization, with rapid development with the help of market opportunities and financial leverage. However, in recent years, China has continued to promote industrial structure transformation and deleveraging, and affected by the world economy, the epidemic, and other factors, the market has continued to cool, and the past development situation is no longer applicable to the present, and the change in the real estate industry is imminent. Taking the real estate enterprises listed in Shanghai and Shenzhen A-shares as the analysis object, this paper uses the data from three consecutive years from 2019 to 2021, uses the Stata data analysis tool to conduct empirical analysis, and analyzes the relationship between the debt level and business performance of enterprises in the real estate industry in different regions through descriptive statistical analysis and multiple linear regression analysis. The results show that the results vary in different regions, and there is a significant positive correlation between the operating performance and debt level of real estate enterprises in other regions, while the north, Shanghai, and Guangzhou regions do not. The state should strengthen supervision, encourage new financing channels, promote the transformation of enterprise asset structure, optimize the level of assets and liabilities, and then reduce financial risks and ensure the benign development of the market.

Keywords: Real estate industry, Level of liabilities, Business performance

1. Introduction

1.1. Research Background

After the reform of the urban housing system in 1988, China's real estate industry moved towards marketization, followed by the entry of a large amount of capital, and the real estate industry entered a golden period of rapid development. The high debt ratio has always been one of the inherent characteristics of the real estate industry. The main reason is, on the one hand, enterprises need to borrow from banks to obtain funds to obtain land resources, and as the government continues to raise interest rates, the cost of acquiring land is rising [1]. On the other hand, the return of funds in the real estate industry is slow, and high debt levels are difficult to avoid. In the final analysis, it is real estate

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companies that continue to increase leverage in the hope of obtaining greater returns under the premise of being sure that they can get a return. Currently, the real estate market is hot, housing prices are soaring, and the high debt ratio often has a significant positive correlation with the operating performance of real estate enterprises [2].

After 2014, the real estate market entered a stage of decline and transformation. On the one hand, the problem of irregular development in the real estate industry has gradually come to light. It is not uncommon for buyers to live for several years in residential buildings with four different certificates ("State-owned Land Use Certificate", "Construction Land Planning Permit", "Construction Engineering Planning Permit", and "Construction Engineering Construction Permit"). The government began to control the inflow of funds, strictly check the qualifications of developers, and also require real estate developers to provide at least 30% of their own funds in the project and have a second-level qualification for development projects to obtain bank loans. On the other hand, it is to meet the needs of China's economic structural transformation and further promote the requirements of supply-side reform. At the end of 2015, the government proposed mandatory "deleveraging" for China's economic development, that is, requiring enterprises or individuals to gradually reduce leverage in a controllable way and rhythm in the form of increasing the proportion of equity capital to prevent financial risks. In 2018, the policy of "three to one reduction and one supplement" was introduced, which is a further expansion of the requirements of "deleveraging", that is, to reduce production capacity, inventory, leverage, reduce costs and make up for shortcomings, optimize the industrial structure in an all-round way, and accelerate industrial transformation [3]. In 2020, the "three red lines" restricting the real estate industry were introduced, namely. First, the asset-liability ratio of real estate enterprises after excluding pre-sale funds should not be greater than 70%; Second, the net debt ratio of real estate enterprises shall not be greater than 100%; Third, the "cash-to-debt ratio" of real estate enterprises is less than 1. The purpose of these new regulations is to standardize the use of financial leverage, reduce the leverage ratio of enterprises, improve leverage efficiency, and force real estate enterprises to reduce the level of debt so as to effectively control the occurrence of financial risks. According to the annual report of real estate enterprises, it can be found that most of the corporate debt ratio is 80%~90%, and the actual asset-liability ratio may be higher and the above policies have undoubtedly brought a huge impact on the real estate industry [4].

In September 2021, as one of the leading real estate enterprises, the rupture of Evergrande's capital flow made the people truly realize that the development of the real estate industry has entered a downward stage and how to deal with the relationship between corporate debt level and business performance in the new stage of real estate enterprises to better adapt to the current economic development trend will become an important issue to be considered in the development of China's real estate enterprises.

1.2. Research Significance

This paper mainly analyzes the impact of corporate debt levels of listed companies in the A-share real estate industry on their business performance in different regions, which has certain reference significance for China's government and real estate industry.

On the one hand, the government will continue to strengthen its attention to the debt of the real estate industry, understand the impact of existing policies on its business performance, and improve and modify it on this basis, standardize the development of the real estate industry, and reduce the debt ratio of enterprises as much as possible while ensuring the healthy development of the real estate industry, and reduce the risks caused by the rupture of the capital chain [5].

On the other hand, analyzing the relationship between real estate debt level and business performance in different regions, can provide a reference for the development of real estate

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enterprises in the new market environment and make different judgments for the situation in different regions, "deleverage" within a reasonable range, and meet the requirements of the "three red lines".

2. Study Design

2.1. Sample Selection and Data Sources

In order to ensure the availability, completeness and comparability of data and make this article more valuable and meaningful for research, this paper takes Shanghai and Shenzhen A-share listed real estate enterprises as the analysis object and uses the data of the last three years from 2019 to 2021. And the data is filtered by the following criteria: (1) because there are many anomalies in the financial statements of ST companies and the comparability is not high, ST companies are excluded and only the data of non-ST companies are selected to improve the accuracy of the analysis results; (2) After comparison, companies with abnormal maximum and minimum values and missing data were eliminated to reduce the adverse impact on the analysis results. After screening, 70 real estate companies in Shanghai and Shenzhen A-shares were finally selected as research samples. The relevant data used in the study are derived from the annual reports of each listed real estate company and the Guotai An database (CSMAR), and stata14MP is selected as the analysis and measurement software.

2.2. Research Methods

Referring to the research methods of other scholars and the knowledge of economics during undergraduate study, the data from 2019 to 2021 were selected to descriptive statistical analysis of the mean, maximum, standard deviation and other information obtained after processing. Correlation analysis is then used to determine whether there is a correlation between the explanatory, explained, and control variables. Finally, the relationship between the debt level and business performance of enterprises in the real estate industry is analyzed by multiple linear regression analysis, and finally, the conclusion is reached.

2.3. Variable Picking

2.3.1. The Selection of the Explanatory Variable

Referring to the variable selection of previous scholars, there are many indicators that can measure the business performance of enterprises, and there are absolute indicators, such as main business income, total profit, net profit, etc.. There are also relative indicators, such as net profit margin, return on total assets, etc. In addition, it can be divided into market indicators and financial indicators, but many data in market indicators (such as Tobin's Q and market capitalization) are difficult to obtain and do not have a unified measurement standard, which is difficult to interpret as a variable. Absolute indicators, on the other hand, are difficult to compare when the size of the enterprise is different, so the relative value of financial indicators is selected as the explanatory variable [6].

Return on net assets (ROE) is a relative indicator that can reflect the operating performance of enterprises, and the return on net assets can be decomposed as return on net assets = net interest rate on sales × total asset turnover × equity multiplier. Therefore, this indicator can fully reflect the profitability, operating capacity and solvency of enterprises with strong comprehensiveness and representativeness, so this paper selects return on net assets as an indicator to measure the operating performance of home appliance enterprises [7,8].

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2.3.2. Selection of Explanatory Variables

The asset-liability ratio (LEV) is one of the most commonly used indicators to measure the level of corporate debt, which can measure the solvency of a company, and its value is the ratio of total liabilities to total assets [9]. Generally speaking, a certain asset-liability ratio can enable enterprises to use debt leverage to further increase shareholders' equity [10]. However, the real estate industry often has a high asset-liability ratio due to the large number of pre-receivables and the long recovery cycle. In addition, as pointed out above, an excessive asset-liability ratio will bring excessive debt repayment risk to enterprises, greater financial risks to society, and to a certain extent, may also have a negative impact on the business performance of enterprises. Based on the fact that Chinese enterprises generally publish their annual financial statements in December, only December from 2019 to 2021 is screened out as an explanatory variable.

2.3.3. Controls the Selection of Variables

(1) Corporate Leverage Ratio (LER)

Enterprises in the real estate industry often increase leverage through debt financing and other ways to seek greater returns, and their financing methods mainly obtain funds in the form of borrowing from banks and issuing bonds, which to a certain extent determines the level of corporate debt [11]. Enterprise leverage can be divided into financial leverage, operating leverage and comprehensive leverage, this paper studies the relationship between the overall debt level of enterprises and business performance, so the comprehensive leverage is selected as an indicator of the leverage level of real estate enterprises.

(2) Enterprise Size (SIZE)

Most scholars believe that the scale of enterprises will affect the debt level and business performance of enterprises [12], and larger enterprises often have more sufficient funds, better market reputation, and better organizational structure, which make large enterprises often able to obtain more investment, thereby obtaining more profits, and then improving business performance. Scholars usually use total assets as an indicator to measure the size of an enterprise, and because the total amount of assets is large, the total amount of assets is logarithmic as a control variable, that is, enterprise size (SIZE) = Ln (total assets) [13].

(3) Business Growth (GROW)

The growth of an enterprise reflects the development potential of an enterprise. Whether for investors outside the enterprise or internal decision-makers of the enterprise, the growth of the enterprise is a very important indicator [14]. Enterprises with better growth often mean that they can achieve higher business performance in the future business process and gradually increase the scale of the enterprise, so that the enterprise enters a virtuous circle of development. This paper selects the net profit growth rate of enterprises as the standard to measure the growth of enterprises.

(4) Type of the enterprise (TYPE)

Considering that Type of the enterprise may have an impact on the relationship between their operating performance and gearing ratios, SOEs(State-owned enterprises) are generally more likely to obtain financing, especially from local banks and governments; Private companies, on the other hand, are more difficult, face higher financing thresholds, and raise relatively small scales. So it was decided to introduce dummy variables, assigning a value of 0 to private enterprises and 1 to state-owned enterprises, taking into account their impact [15].

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Table 1: Variable summary

The variable type	The variable name	Variable symbol
Explanatory variables	Asset liability ratio	LEV
Explained variables	Return on net assets	ROE
Control variables	Business growth	GROW
	Enterprise Size	SIZE
	Corporate Leverage Ratio	LER
	Type of the enterprise	TYPE

(5) Place of incorporation

In this paper, the data of real estate enterprises listed on the Shanghai and Shenzhen A-shares are divided into two groups, one is the economically developed area of Beijing, Shanghai and Guangzhou (31 valid samples are obtained after screening the data) and the other is other regions (39 valid samples are obtained after screening the data).

In recent years, the state has introduced a series of policies to regulate the real estate market and cooperate with the country's economic transformation efforts, so real estate companies in the Beijing, Shanghai and Guangzhou areas often face stricter supervision. In contrast, enterprises located in economically developed regions usually have a better business environment, can obtain loans more easily, and the market is more standardized, which is conducive to the further development of enterprises and the improvement of business performance. Then, studying its results has certain practical significance. This paper will classify based on different regions, analyze the two sets of data separately, and finally draw conclusions.

2.3.4. Model Settings

The main purpose of this paper is to explore the relationship between the debt level (expressed as asset-liability ratio) and the business performance of real estate developers registered in different regions, and to use the leverage ratio as a reference index, combined with the theoretical research of previous scholars, it is believed that the debt level has a positive or negative impact on business performance. After referring to the theoretical research of other scholars, in order to further test the influence of independent variables (asset-liability ratio) on the dependent variable (business performance) in different regions, this paper decides to add the two indicators of growth and company size that may affect performance to the model as control variables for testing, and finally constructs the model as follows:

$$ROE=\beta_0+\beta_1 LEV+\beta_2 LER+\beta_3 LN+\beta_4 GROW+\beta_5 TYPE+\varepsilon$$

where β_0 is represented as the regression coefficient, ε is the random error term, and the remaining variables are shown in the table 1 above [5,9,15,16].

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3. Empirical Analysis

3.1. Descriptive Statistical Analysis

3.1.1. Descriptive Statistical Analysis of Debt Levels in the Real Estate Industry

Table 2: Economically developed areas (Beijing, Shanghai, Guangzhou)

	average value	standard deviation	maximum	minimum	median
2019	0.610398259	0.180161744	0.84359	0.11869	0.6482995
2020	0.616985315	0.195093858	0.896109	0.084254	0.660017
2021	0.614837037	0.193899654	0.899396	0.13822	0.6795325
2019-2021	0.615335559	0.182856152	0.899396	0.084254	0.654349

Table 3: Other regions

	average value	standard deviation	maximum	minimum	median
2019	0.667810983	0.214234357	0.947168	0.09589	0.744827
2020	0.6803186	0.228138327	0.894023	0.121058	0.755819
2021	0.695392203	0.197799854	0.960068	0.102215	0.7400915
2019-2021	0.681951899	0.208019905	0.960068	0.09589	0.748379

Through the above Tables 2 and 3, it can be found that whether in the Beijing, Shanghai and Guangzhou regions or other regions, although the asset-liability ratio of real estate enterprises has fluctuated in the past three years, the fluctuations are not large, and the overall situation is relatively stable. Comparing the two tables, it can be found that in the three years from 2019 to 2021, the asset-liability ratio of real estate enterprises in Beijing, Shanghai and Guangzhou is significantly lower than that of other regions in terms of average, maximum and median. To a certain extent, this also shows that real estate enterprises in the Beijing, Shanghai and Guangzhou areas are facing stricter regulatory measures, playing a leading role in deleveraging and corporate transformation. In addition, the difference between the maximum and minimum values is large, indicating that the difference in debt levels between different enterprises is more obvious.

3.1.2. Descriptive Statistical Analysis of Real Estate Industry Operating Performance

Table 4: Economically developed areas (Beijing, Shanghai, Guangzhou)

	average value	standard deviation	maximum	minimum	median
2019	0.087491296	0.070283656	0.278733	-0.127027	0.082681
2020	0.051329722	0.092860256	0.209117	-0.220012	0.0604125
2021	0.040117192	0.152093302	0.353784	-0.87977	0.0474475
2019-2021	0.053914797	0.182770423	0.353784	-0.87977	0.066757

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Table 5: Other regions

	average value	standard deviation	maximum	minimum	median
2019	0.031043627	0.309242799	0.260179	-1.709948	0.076746
2020	-0.029158158	0.341807937	0.200463	-1.317635	0.069499
2021	-0.114303509	0.423399306	0.403813	-1.671913	0.028696
2019-2021	-0.007201438	0.366719377	0.403813	-1.671913	0.067342

As shown in tables 4 and 5, the operating performance of the real estate industry in the Beijing, Shanghai, Guangzhou and other regions showed a downward trend in the three years from 2019 to 2021, and the ROE in the Beijing, Shanghai, Guangzhou region decreased by 41% and 22% in 2019-2020 and 2020-2021, respectively; Other regions saw even steeper declines, falling 194 percent and 292 percent, respectively. In comparison, the return on net assets in other regions has fluctuated greatly in the past three years, and there is also a large gap between the maximum and minimum values, and the average value has turned from positive to negative. Although the overall return on equity in the Beijing, Shanghai and Guangzhou regions also showed a downward trend, the overall speed was relatively stable and the average value remained positive. To a certain extent, it shows that the market mechanism of real estate enterprises in the Beijing, Shanghai and Guangzhou areas is more perfect, the market supervision is stricter, and the market environment is more stable, so before and after the epidemic, the economic situation fluctuated sharply and the real estate industry was greatly affected, and the overall data performance was relatively stable.

3.2. Correlation analysis

By dividing the sample companies into the Beijing, Shanghai, Guangzhou region and other regions, the correlation test between the gearing ratio and the operating performance indicator (return on equity) and other control variables was carried out to determine whether there was multicollinearity.

3.2.1. Test on the Correlation Between Asset-liability Ratio and Net Yield of Real Estate Enterprises in Beijing, Shanghai and Guangzhou

Table 6: Correlation analysis of regional variables in Beijing, Shanghai and Guangzhou

	ROE	LEV	LER	SIZE	GROW	TYPE
ROE	1.000					
LEV	0.313*	1.000				
LER	-0.540***	-0.076	1.000			
SIZE	0.296	0.706***	-0.211	1.000		
GROW	-0.199	-0.623***	0.152	-0.416**	1.000	
TYPE	0.031	0.332*	-0.131	0.201	-0.280	1.000

From the correlation analysis results in Table 6 above, it can be concluded that the real estate listed enterprises in the Beijing, Shanghai and Guangzhou regions will be listed in the three years of 2019~2021:

(1) There is a positive correlation between the asset-liability ratio of enterprises and the return on net assets of enterprises in this region and the correlation coefficient is 0.313, and it is significant at the level of 10%, indicating that as the proportion of liabilities in the company's assets increases, the company's operating performance will increase accordingly.

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(2) There is a negative correlation between the comprehensive leverage ratio of enterprises and the return on net assets, and the correlation coefficient is -0.540, which is significant at the level of 1%, and the coefficient is large, indicating that a higher comprehensive leverage ratio will have a negative impact on the business performance of the enterprise and is not conducive to the development of the enterprise.

(3) There is also a certain correlation between the control variables: first, there is a positive correlation between the scale of the enterprise and the asset-liability ratio of the enterprise, with a correlation coefficient of 0.706, which is significant at the level of 1%, indicating that large-scale real estate enterprises are often accompanied by a higher asset-liability ratio; Second, there is a negative correlation between enterprise growth and corporate asset-liability ratio, with a correlation coefficient of -0.623, which is significant at the level of 1%, indicating that the asset-liability ratio of real estate enterprises with strong development capabilities in Beijing, Shanghai and Guangzhou is relatively low. Third, there is a negative correlation between the growth of enterprises and the scale of enterprises, and the correlation coefficient is -0.416, which is significant at the level of 5%, indicating that with the increase of enterprise scale, the growth rate of enterprises will be reduced, or even negative growth; Fourth, SOEs will have a higher gearing ratio, with a coefficient of 0.332, which is significant at the level of 1%, reflecting that SOEs can indeed obtain more financing. The correlation between the remaining variables is not important, but it still has some reference significance.

(4) Therefore, according to the above analysis, it can be found that there is a positive correlation between the explanatory variable and the explanatory variable. In addition, there is also a certain correlation between the control variables, and according to the research results of previous scholars, the existence of these relationships also has a certain degree of rationality. Overall, the control variables selected in the model have good research significance.

3.2.2. Correlation Test between Asset-liability Ratio and Net Yield of Real Estate Enterprises in other Regions

Table 7: Correlation analysis of other regional variables

	ROE	LEV	LER	SIZE	GROW	TYPE
ROE	1.000					
LEV	0.516***	1.000				
LER	-0.402**	0.068	1.000			
SIZE	0.468***	0.704***	0.038	1.000		
GROW	0.248	0.241	-0.240	0.185	1.000	
TYPE	0.221	-0.058	-0.302*	-0.194	-0.102	1.000

From the correlation analysis results in the Table 7 above, it can be concluded that real estate listed companies in other regions in the three years of 2019~2021:

(1) The relationship between the asset-liability ratio of enterprises and the return on net assets of enterprises in this region is also positively correlated, with a correlation coefficient of 0.516 and a significant correlation at the level of 1%. Compared with the correlation coefficient of Beijing, Shanghai, and Guangzhou (0.313), the correlation coefficient of other regions is larger, indicating that the increase in the debt level of real estate enterprises in this region can bring greater operating performance benefits.

(2) There is also a negative correlation between the comprehensive leverage ratio of enterprises and the return on net assets; the correlation coefficient is -0.402, which is significant at the level of 5%, and the coefficient is larger than -0.540 in the Beijing, Shanghai and Guangzhou regions,

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indicating that the negative punishment brought by the higher comprehensive leverage ratio to the business performance of enterprises in other regions is less affected.

(3) There is a positive correlation between enterprise size and return on net assets, and the correlation coefficient is 0.468, which is significant at the level of 1%. It shows that as the scale of the enterprise increases, the business performance of the enterprise will increase accordingly. In the north, Shanghai, and Guangzhou regions, the relationship coefficient is small and the result is not significant.

(4) The same as in the Beijing, Shanghai and Guangzhou regions, there is also a certain correlation between the control variables in other regions: there is also a positive relationship between the scale of enterprises and the comprehensive leverage ratio of enterprises in other regions, which is 0.704, which is significant at the level of 1%, and the correlation coefficient is not much different from 0.706 in the Beijing, Shanghai and Guangzhou regions. When the nature of the enterprise is a state-owned enterprise, the leverage ratio will be relatively reduced, and the correlation coefficient is -0.302, which is significant at the level of 1%, which to a certain extent, indicates that the state-owned enterprise will take the lead in reducing the leverage ratio and responding to national policies. The correlation between the remaining variables is not significant, but it still has some reference significance.

(5) Compared with the Beijing, Shanghai and Guangzhou regions, the correlation of other regions is not much different, and the relationship between enterprise asset-liability ratio, comprehensive leverage ratio and enterprise-scale and business performance are all positive, negative, and positive, respectively. In terms of the relationship between enterprise growth and business performance, the Beishangguang region is negatively correlated, and other regions are positively correlated, although the latter results are not significant, but on the whole, to a certain extent, it reflects the differences brought by different regions, and the variable selection has good research significance.

3.3. regression Analysis

3.3.1. Regression Analysis of Economically Developed Regions

Table 8: Linear regression

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LEV	.117	.08	1.46	.158	-.048	.281	
LER	-.066	.02	-3.34	.003	-.107	-.025	***
SIZE	-.001	.006	-0.15	.88	-.014	.012	
GROW	0	.001	0.35	.726	-.002	.003	
TYPE	-.015	.018	-0.85	.404	-.052	.022	
Constant	.137	.143	0.96	.345	-.157	.431	

Mean dependent var	0.087	SD dependent var	0.051
R-squared	0.388	Number of obs	31
F-test	3.172	Prob > F	0.024
Akaike crit. (AIC)	-101.303	Bayesian crit. (BIC)	-92.699

*** $p<.01$, ** $p<.05$, * $p<.1$

Table 8 shows the regression results of the asset-liability ratio to ROE of real estate enterprises in Beijing, Shanghai and Guangzhou, from which it can be seen:

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(1) Combined with the research conclusions of previous scholars, generally speaking, before 2015, when the real estate market was hot, most enterprises would obtain funds in the form of debt financing, real estate development, land resource reserves and repayment of the previous year's debt, this way of leveraging will significantly increase the debt ratio of enterprises, and the real estate industry to recover costs through sales, the profit cycle is longer, but under the circumstances at that time, the larger the investment can get the higher the return. That is, there is a positive correlation between the asset-liability ratio and the return on net assets of real estate enterprises.

Based on the real estate industry data of Beijing, Shanghai and Guangzhou after 2019, there is no significant relationship between the asset-liability ratio of enterprises and the operating performance indicators (ROE). According to the data, it can be found that especially in 2020 and 2021, some real estate industries have not brought obvious improvement in business performance while high debt levels, and some smaller state-owned real estate enterprises represented by urban investment enterprises still maintain a relatively good return on net assets at a relatively good level under the condition of low debt levels.

The main reasons are as follows: First, as the real estate market enters a downward market, it is no longer possible to maintain high operating performance through the method of "debt support" in the past. Second, although the state has continuously strengthened regulatory measures since 2015, residential buyers in the market have not fully realized that the real estate industry will "cool down", and after the Evergrande thunderstorm in 2021, consumers suddenly realized that the real estate market had entered a downward stage, and pessimism in the market has increased. Third, after the Evergrande thunderstorm, consumer confidence in private enterprises declined, but state-owned enterprises were guaranteed by the government, which did not affect the return on net assets, so the operating performance of some state-owned real estate enterprises was not affected.

(2) From the above table, it can also be found that there is no significant relationship between enterprise size, enterprise growth and enterprise nature in the control variables, while the comprehensive leverage level of enterprises and the p-value of business performance are significantly negatively correlated at the significance level of 0.01, and the correlation coefficient is -0.0663167. It shows that now that real estate has entered the downward market, high leverage will lead to a decrease in business performance, especially in areas with stricter supervision, such as Beijing, Shanghai and Guangzhou, where the leverage ratio is too high, and even penalties will be imposed by the CSRC when exceeding the "three red lines".

(3) In addition, the type of enterprise in the control variable is not significant, the main reason is that after the data processing by region, there are more state-owned enterprises in the Beijing, Shanghai and Guangzhou regions, including 20 state-owned enterprises and 11 private enterprises, and there are large differences between state-owned enterprises and state-owned enterprises, and between state-owned enterprises and private enterprises, which ultimately lead to no insignificant results.

3.3.2. Other regional regression analysis

Table 9: Linear regression

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LEV	.107	.053	2.03	.05	0	.214	*
LER	-.034	.012	-2.74	.01	-.059	-.009	***
SIZE	.01	.007	1.44	.16	-.004	.025	
GROW	0	.001	0.33	.746	-.001	.002	

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Table 9: (continued).

TYPE	.023	.017	1.37	.181	-.011	.057
Constant	-.189	.158	-1.19	.242	-.511	.133
Mean dependent var		0.100	SD dependent var			0.063
R-squared		0.506	Number of obs			39
F-test		6.765	Prob > F			0.000
Akaike crit. (AIC)		-121.992	Bayesian crit. (BIC)			-112.010

*** $p<.01$, ** $p<.05$, * $p<.1$

Table 9 shows the regression results of the asset-liability ratio to ROE of real estate enterprises in other northern regions, from which it can be seen:

(1) In real estate enterprises in other regions, the relationship between the return on net assets and the asset-liability ratio is still positive, and the p-value is significant at the significance level of 0.1, and the coefficient is 0.107. First, the region contains many remote areas and economically backward cities, the influence of national policies and regulatory intensity is small, and the debt level of enterprises is less required. That is, enterprises in the region can still develop through debt financing and will not touch the regulatory red line. Second, the more backward areas have not fully entered the downward market, housing prices have not exceeded their real value too much, and market consumers still have housing demand. In addition, many local governments still receive fiscal revenue in the form of "land sales". That is, the market still has room to rise, and increasing the debt level can still improve business performance to a certain extent.

(2) Observing the control variables, it can still be found that the leverage ratio is negatively correlated with business performance, and the p-value is significant at the significance level of 0.01. However, compared with the Beijing, Shanghai and Guangzhou regions, it can be found that the coefficient of -0.034 in other regions is greater than -0.066 in the Beijing, Shanghai and Guangzhou regions, that is, under the requirements of "deleveraging", "three reductions, one to one supplement" and "three red lines", the high leverage ratio has been suppressed nationwide. In developed regions with more complete market systems and stricter supervision, enterprises will face higher costs with high leverage ratios. In other regions that are more backward, the negative impact of high leverage on business performance is small.

(3) The same as in the Beijing, Shanghai and Guangzhou regions, the control variables of enterprise nature are still not significant, but on the contrary, the number of private enterprises in other regions is large, and the number of state-owned enterprises is small, including 23 private enterprises and 16 state-owned enterprises, which is basically maintained in the number of state-owned enterprises and private enterprises evenly divided in the comprehensive national region. In other regions with more private companies, there is a wider gap between the size of the company, and the results are not significant.

4. Conclusions

4.1. Conclusion

This paper takes 70 real estate enterprises listed in Shanghai and Shenzhen (including 31 in the Beijing, Shanghai, and Guangzhou region and 39 in other regions) as the research object, selects the relevant data from 2019 to 2021, and divides them into two groups according to geographical location, the Beijing, Shanghai, Guangzhou region and other regions, so as to construct the regression model used in the analysis respectively, and examine the relationship between the debt level and business

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performance of real estate enterprises in different regions under the downward pressure of the market, the beginning of laws and regulations, and the beginning of China's economic transformation.

Through descriptive statistical analysis, the following conclusions can be drawn: First, in the three years from 2019 to 2021, the asset-liability ratio of real estate enterprises fluctuated little, with the Beijing, Shanghai and Guangzhou areas remaining at about 0.61 and other regions remaining at about 0.68. Second, the asset-liability ratio of real estate enterprises in Beijing, Shanghai, and Guangzhou is significantly lower than that of other regions. Third, in the environment of increasing downward pressure on the economy, the return on net assets of real estate enterprises is gradually decreasing.

Through the empirical analysis of the model results, it can be found that there is no significant linear relationship between the operating performance of real estate enterprises and the debt level in the Beijing, Shanghai and Guangzhou areas. Still, the leverage ratio of enterprises is significantly negatively correlated with business performance. In other regions, there is still a positive correlation between the operating performance of real estate enterprises and the level of debt, but there is still a negative correlation between the leverage ratio of enterprises and the return on net assets. The main reasons for the difference are the strictness of government regulation and consumer behavior. In addition, the distinction between state-owned enterprises and private enterprises did not have a significant impact on the results.

In addition, there are still some coefficients in the model that are not completely significant, which may be due to the following reasons: First, the data obtained from the Guotai database is not perfect, and some data related to the corporate leverage ratio and growth indicators are missing in some years, and finally these data are not retained. Second, national policy adjustments, the impact of the epidemic, the Evergrande thunderstorm and other factors have caused huge changes in the market environment faced by the real estate industry in a short period of time, and a new business operation mode has not yet been formed. Third, there are great differences between different regions, and the relationship between the specific debt level and business performance of the real estate industry in different provinces cannot be fully measured, resulting in the results of the research and analysis of the real estate industry cannot be completely accurate.

4.2. Policy Recommendations

4.2.1. For Government

(1) Adhere to economic structural transformation, effectively implement "deleveraging", and control systemic risks in the real estate industry

The analysis results of this paper show that there are still obvious differences in the asset-liability ratio of real estate enterprises in different regions. In the current market environment, although the return on equity of the real estate industry in the Beijing, Shanghai, and Guangzhou areas has declined, it is relatively slow, and it can still maintain the return on equity above 0 under the low level of debt. However, the overall debt level of real estate enterprises in other regions is relatively high, and the return on net assets has turned negative, and industrial transformation is urgent. High leverage will not only increase the financial risk of the market and cause a bubble economy, but also, in the current real estate industry, has not brought about the improvement of business performance, so the state should implement the implementation of "deleveraging" as much as possible, especially in the real estate industry with a high debt ratio.

(2) Give play to the role of the market and encourage equity financing

Loans from banks account for a large amount of liabilities in the traditional real estate sector, as well as bonds issued by companies themselves [17]. However, the repayment date of these two financing channels is determined, the repayment amount is large, the repayment pressure of real estate enterprises is greater, and the capital chain may even be broken in serious cases. Moreover, as the

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state tightens its control over bank lending, companies will be able to obtain fewer loans from banks. Equity financing is more flexible, and financing channels are more diverse.

(3) Stabilize the sentiment of the real estate market and maintain the stability of the real estate market

Through previous surveys, it is known that about 90% of the people in China own at least one property, so it is necessary to implement the gradual improvement of the asset structure of the real estate industry under the premise of reducing leverage in a controlled way and rhythm and maintaining a stable market order while ensuring economic growth [18]. Reducing the impact of emergencies such as the epidemic on the real estate market is excessive, causing severe fluctuations.

4.2.2. For Companies

(1) Take the initiative to reduce leverage and reduce debt

According to the analysis of this article, a high leverage ratio can no longer bring about the improvement of business performance and even bring negative impact. In the case that the real estate market has entered the downward market and the policy requirements have become more stringent, only by actively reducing leverage, optimizing the structure of assets and liabilities, and actively carrying out enterprise transformation can we adapt to the needs of future development. Real estate enterprises should combine external information, strengthen internal management of enterprises, and strictly control the risk of excessive leverage [19]. Do a good job of quarterly and annual financial analysis, formulate a reasonable budget according to the development of your own enterprise, and adjust it in time for different situations to ensure the liquidity of cash flow and prevent the break of the capital chain. In addition, deleveraging also needs to pay attention to grasp the principle of moderation. The real estate industry itself has the characteristics of a long capital return cycle, the debt ratio is higher than other industries, which is a normal phenomenon, to reduce the leverage level within a reasonable range.

(2) Develop different standards for different regions

After analysis, it can be found that in economically backward areas, the real estate market still has a certain room for growth, therefore, for different real estate enterprises in the region, under the premise of not crossing the central "three red lines", different development strategies should be formulated for different regional conditions. Large-scale real estate enterprises, with projects in various cities, can reduce the level of debt in the north, Shanghai and Guangzhou areas, while in other areas they can appropriately relax control to maximize economic benefits.

(3) Find new financing channels

With the implementation of the "three red lines", it can be expected that the scale of loans that the existing real estate industry can obtain from banks will decline. However, the "debt support" model formed in the past has not been completely eradicated, and some enterprises still need to expand financing channels to repay past loans [20]. In addition, the low proportion of endogenous financing and the high proportion of debt financing are important phenomena in China's real estate industry, and it is crucial to cooperate with the "deleveraging" work and avoid touching the "three red lines".

(4) Pay attention to the direction of policy changes and make reasonable expectations for the future

Real estate enterprises in the Beijing, Shanghai, and Guangzhou regions should, under the supervision of the market, reduce their own asset-liability ratio and other financial indicators as soon as possible in accordance with the requirements of the new regulations and strive to reduce them to a reasonable range, not just meet the requirements of national policies, so as not to reduce the leverage ratio at an excessively fast pace and cause market volatility in a short period of time after the introduction of the policy.

Real estate enterprises in other regions should refer to the corporate practices of the Beijing, Shanghai and Guangzhou regions to a certain extent, take advantage of the high debt level to develop

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to a certain extent, and carry out structural transformation as soon as possible, rather than being driven by policies and temporarily deleveraging on a large scale.

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